

## Installing cygwin/openssh

One question to think about at the start of an install is whether you want to download cygwin's files to your desktop or whether you want to install online. It's only a matter of local disk space and performance should you need to perform another install. The cygwin packages are typically wrapped into bzip2 format, and bzip2 is automatically included in the download so you can get bootstrapped. So, the initial session consists of a few configuration choices and then downloading and unzipping the files. These functions are all done by the cygwin setup program.

What is cygwin? Historically a number of folks ported things like tar, vi and some of their other unix favorites to a DOS environment. Later, the cygnus project, I believe, devised the idea that a larger body of unix/linux functionality could be more readily ported by supplying a runtime library that maps unix/linux kernel calls into windows exec calls. As a result there is a large assortment of unix/linux code compiled to run natively under windows that links to the interface library, cygwin1.dll. None of the code gets installed into windows itself but into a directory of your choosing. By default this is C:\cygwin. Most of the packages simply run as windows applications that can be manipulated the same way as any other window application. Functions like the clipboard and copy/paste work within cygwin and to/from other windows apps.

One perspective of how well the unix/linux environment is emulated is that cygwin defines several mount points for the user's convenience: c:\windows is mounted as the "root" directory for the rest of the cygwin package. Underneath this directory, you will find the usual bin, etc, home, usr and other common root directories. In a cygwin bash shell one uses forward slashes as separators in a pathname. If you are using NTFS, then concepts of ownership, permissions and ACLs are mapped to their NTFS equivalents. As an example, in a bash shell, /usr/bin is c:\windows\cygwin\usr\bin. For convenience you can also access other drives by prefixing the drive letter or /cygdrive/drive like so:

```
d:/other directory
/cygdrive/d/other directory
```

and \$HOME points to /home/username (your local login name) and this c:\cygwin\home\username to windows.

My practice is to pick the cygwin packages (such as openssh) that I want to use because this serves to limit both the download time and disk space by picking a subset of the 1 GB cygwin distribution. The basic installation needed for cygwin's shells, editors and openssh is on the order of 250 MB. The compressed downloaded files are about 80 MB. One can go back to the cygwin download site to add and/or update packages at one's convenience. There's some stuff I find useful such as vi, make, gcc, tar and additional tools. The cygwin package selection process is able to include other packages that your choices depend on, so as you review things, you will likely find choices to be downloaded that you didn't explicitly make.

1) download "Install Cygwin Now" from <http://www.cygwin.com/>

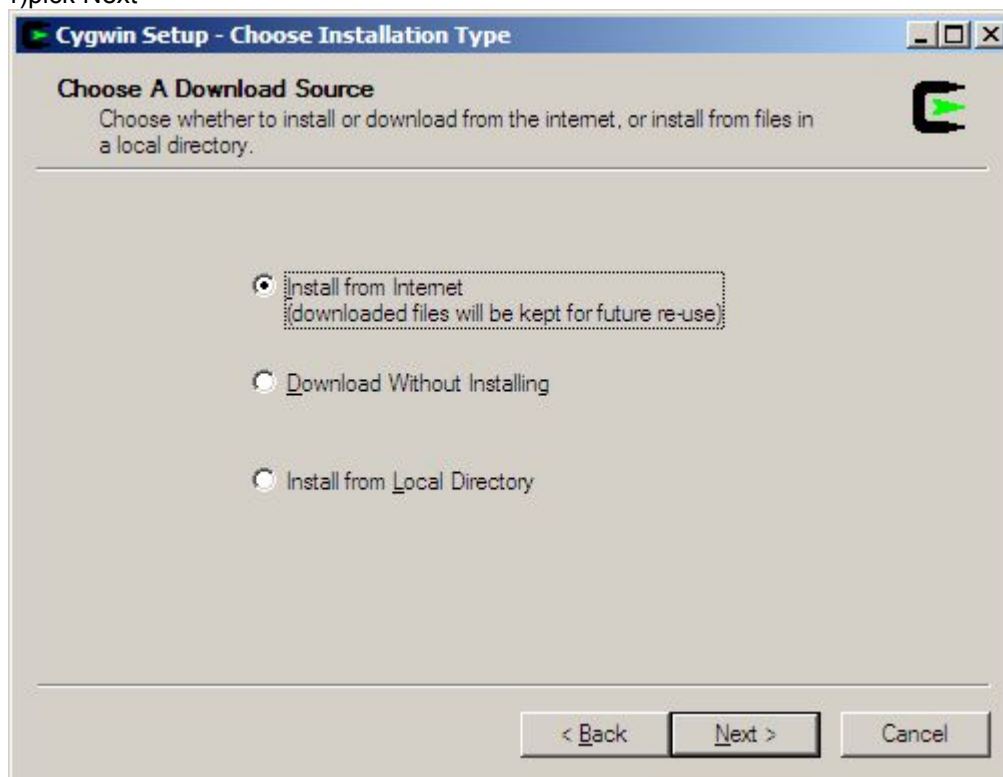
I find it convenient to save this in a Download\cygwin directory where I keep the rest of the stuff I download.

2) You'll need to be logged in as administrator or "runas" administrator to perform a setup.

3) start setup.exe

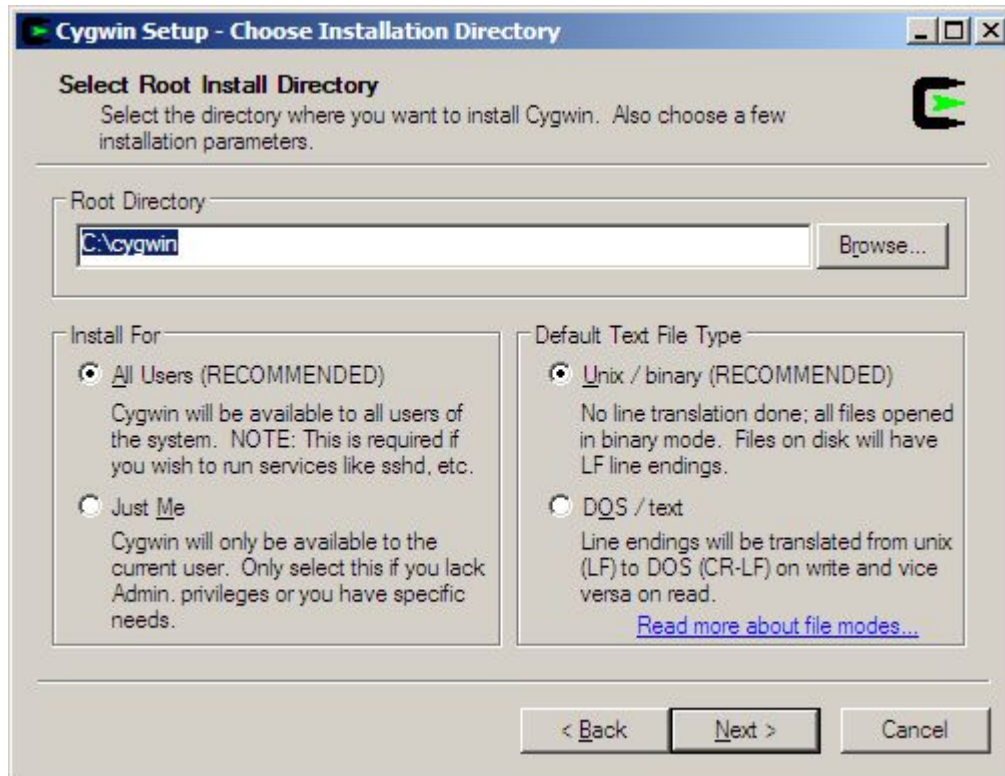


4)pick Next

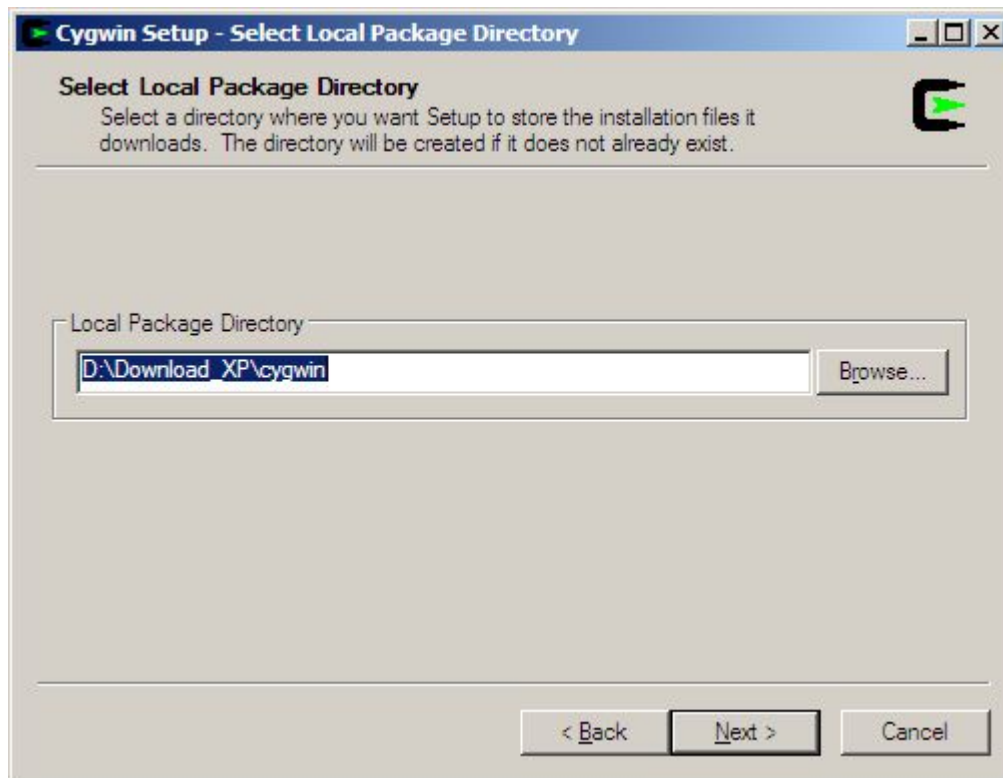


The default above is to save the downloaded files on a local disk.

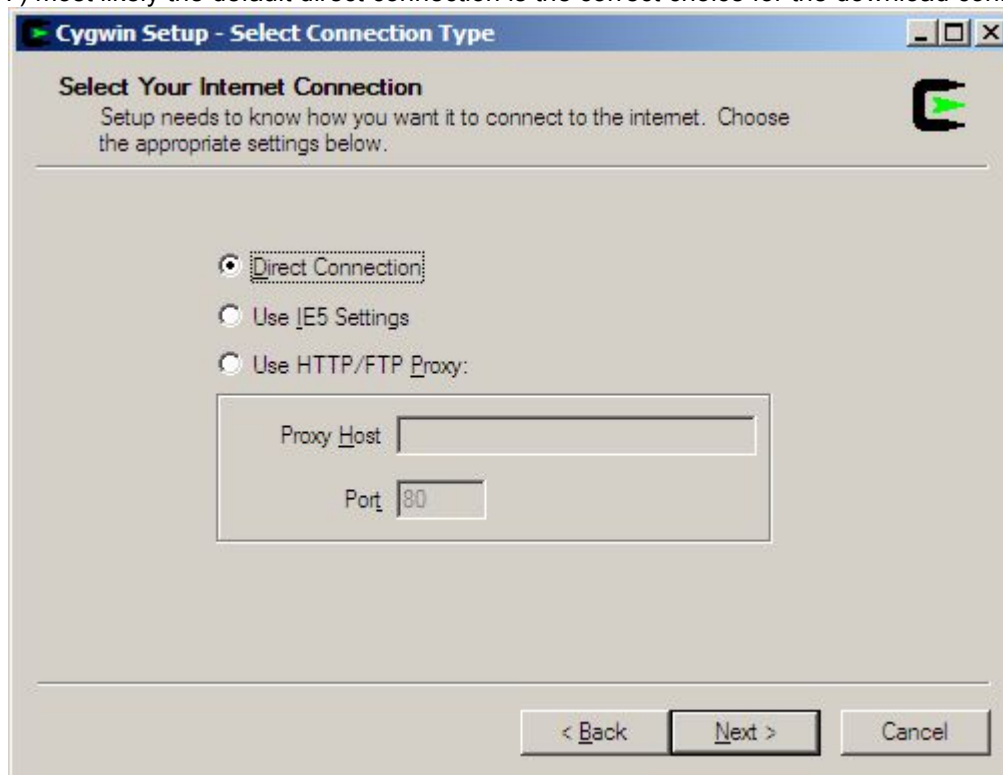
5) This brings us to an installation choice. It is advised to install into a directory and not to c:\ itself. Accepting the default Unix text type is convenient for creating/editing text files that have LF (line feed) at the end of a line rather than LF/CR as windows uses.



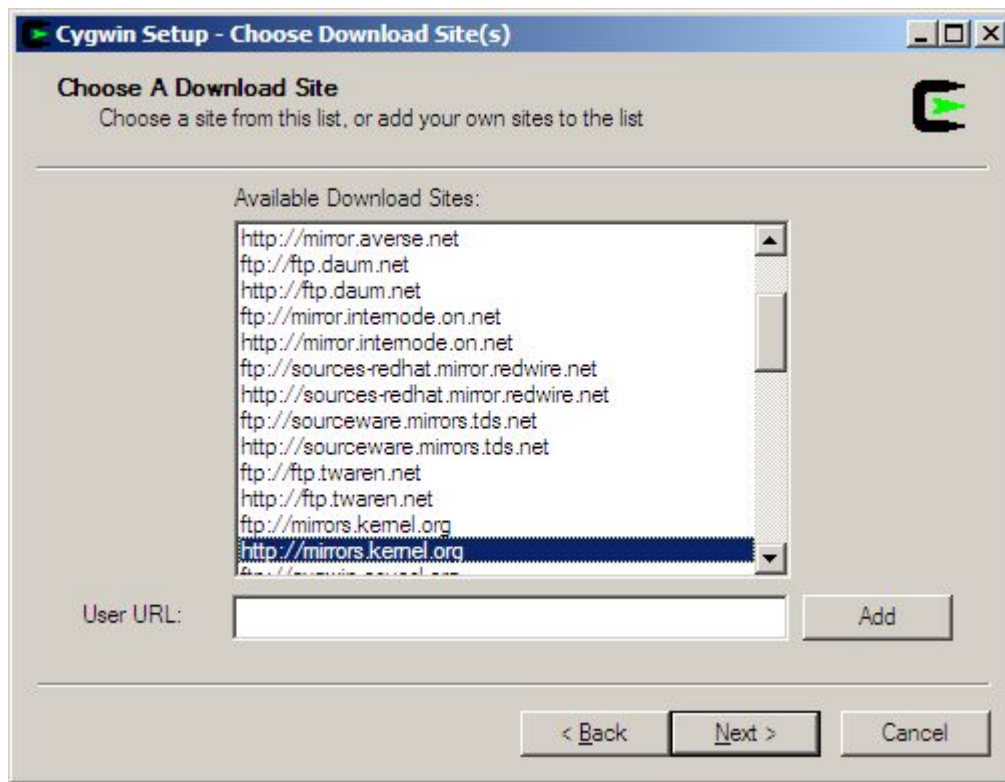
6) Here we get to choose where we want the downloaded bzip2 files stored



7) most likely the default direct connection is the correct choice for the download connection

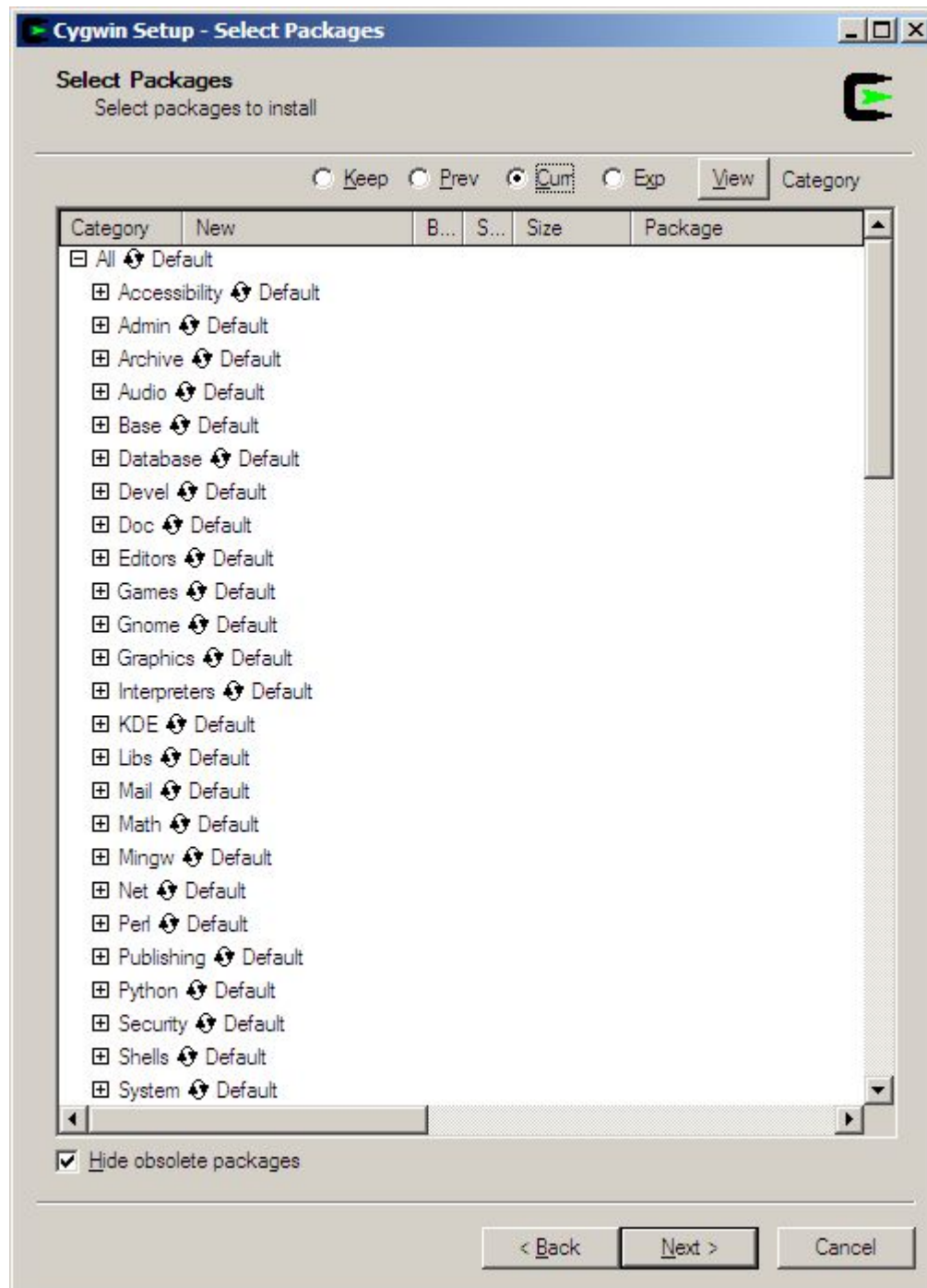


8) This panel offers a choice of download sites. After a bit of checking I found that mirrors.kernel.org is 10 hops from my location -- might even be here in CA.



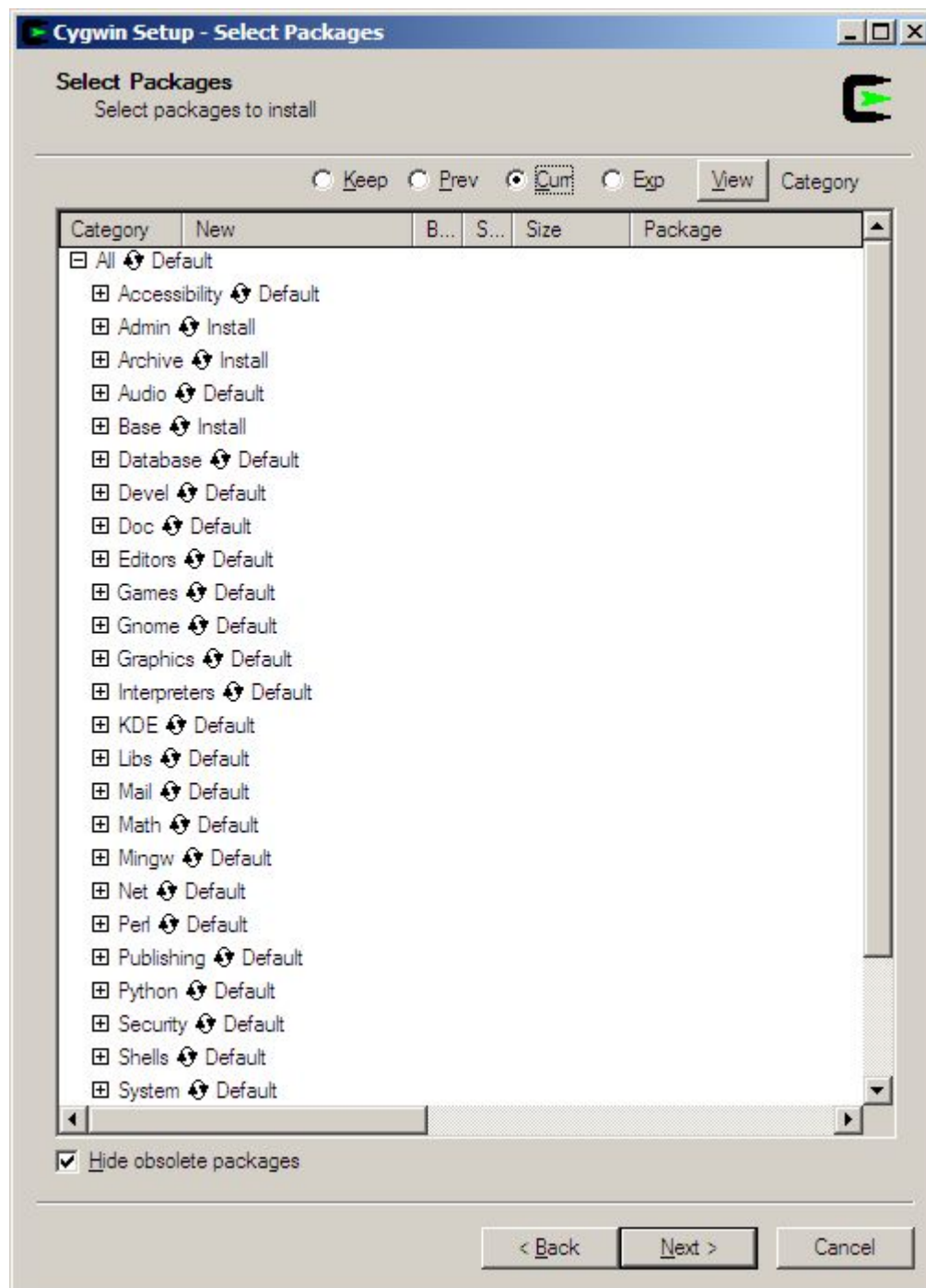
9) and now we get to the list of packages and the picks we should make. This window is stretch-able so you can see more of what's here. Please note that "Default" means no action as far as a new install, but this is meaningful when you return to get an update.

There are lots of packages in each of the categories shown. Picking the plus sign will open the submenu. To the right of the package name, there's a circular arrow that can be used to rotate through a set of choices besides "Default". A single click on this circle will advance to the next choice on the circle and after several clicks, you'll be back to the first choice on the circle. We will work our way from top to bottom. After making our selections, picking Next on this display will start the download and install process.

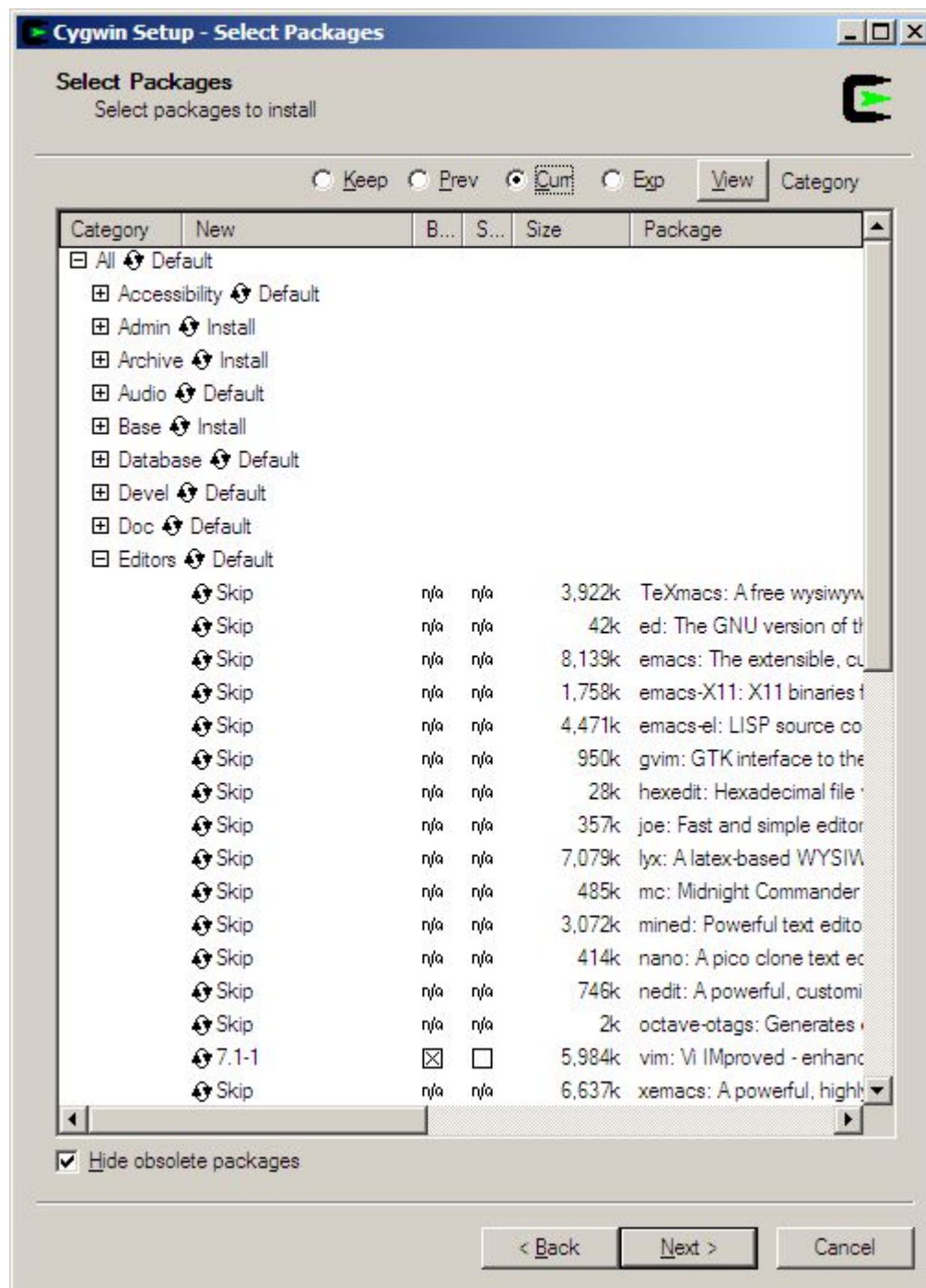


10) using a single mouse click on the circle following Admin, Archive and Base we choose to "install" each of these packages.





11) here we open "Editors" and I pick Vi(m). You can make your own choice(s) here.



12) open up Net and click on the circle for openssh. Making this choice will also cause openssl to be selected.



# Cygwin Setup - Select Packages

## Select Packages

Select packages to install

☐ Keep ☐ Prev ☒ Cum ☐ Exp View Category

Category	New	B...	S...	Size	Package
Net	Default				
	Skip	n/a	n/a	1,252k	apache: The Apache HTTP (V
	Skip	n/a	n/a	1,219k	apache2: Apache HTTPD 2
	Skip	n/a	n/a	176k	apache2-devel: Apache HTTP
	Skip	n/a	n/a	1,287k	apache2-manual: Apache HT
	Skip	n/a	n/a	22k	autossh: Automatically restart S
	Skip	n/a	n/a	36k	bsflite: Minimalist console AIM
	Skip	n/a	n/a	141k	c3270: 3270 Emulator (Curses)
	Skip	n/a	n/a	20k	connect-proxy: SSH Proxy Con
	Skip	n/a	n/a	17k	corkscrew: Tunnel TCP conne
	Skip	n/a	n/a	110k	ctorrent: BitTorrent client writte
	Skip	n/a	n/a	253k	curl: Command line tool for tran
	Skip	n/a	n/a	292k	curl-devel: Development supp
	Skip	n/a	n/a	23k	dog: Enhanced replacement fo
	Skip	n/a	n/a	461k	geoip: IP lookup command line
	Skip	n/a	n/a	140k	gnutls: Library implementing TL
	Skip	n/a	n/a	42k	gnutls-devel: Library implement
	Skip	n/a	n/a	971k	gnutls-doc: Library implementin
	Skip	n/a	n/a	176k	gq: Interactive graphical LDAP
	Skip	n/a	n/a	163k	httptunnel: Tunnel data stream
	Skip	n/a	n/a	11k	ii: Minimalist FIFO and filesyste
	Skip	n/a	n/a	327k	inetutils: Common networking u
	Skip	n/a	n/a	811k	irssi: A terminal based IRC clie
	Skip	n/a	n/a	709k	lftp: Sophisticated file transfer p
	Skip	n/a	n/a	182k	libgnutls11: Library implementin
	Skip	n/a	n/a	189k	libidn: Internationalized domain
	Skip	n/a	n/a	139k	libopenldap2: Lightweight Direc
	Skip	n/a	n/a	140k	libopenldap2_2_7: Lightweight
	Skip	n/a	n/a	150k	libopenldap2_3_0: Lightweight
	Skip	n/a	n/a	57k	libwrap-devel: (devel) provides
	Skip	n/a	n/a	12k	libwrap0: (runtime) provides ho
	Skip	n/a	n/a	265k	lighttpd: A light-weight and flexi
	Skip	n/a	n/a	337k	naim: Console AIM, ICQ, IRC, a
	Skip	n/a	n/a	234k	ncftp: An improved FTP client
	Skip	n/a	n/a	50k	netcat: A simple but powerful n
	Skip	n/a	n/a	105k	nfs-server: Universal NFS servi
	Skip	n/a	n/a	1,036k	openldap: Lightweight Director
	Skip	n/a	n/a	704k	openldap-devel: Lightweight D
	4.7p1-2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	533k	openssh: The OpenSSH serve
	0.9.8g-1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	983k	openssl: The OpenSSL runtime
	Skip	n/a	n/a	554k	openssl097: The OpenSSL 0.9
	Skip	n/a	n/a	9k	ping: A basic network tool to te
	Skip	n/a	n/a	211k	planet: Flexible RDF, RSS and

13) Open X11 and select X-start-menu-icons and this will also select the rest of the free X11 packages. While not as fast as the commercial versions, this package provides a useful xterm and other tools. Our goal is to use VNC rather than X11 anyway.

# Cygwin Setup - Select Packages

## Select Packages

Select packages to install

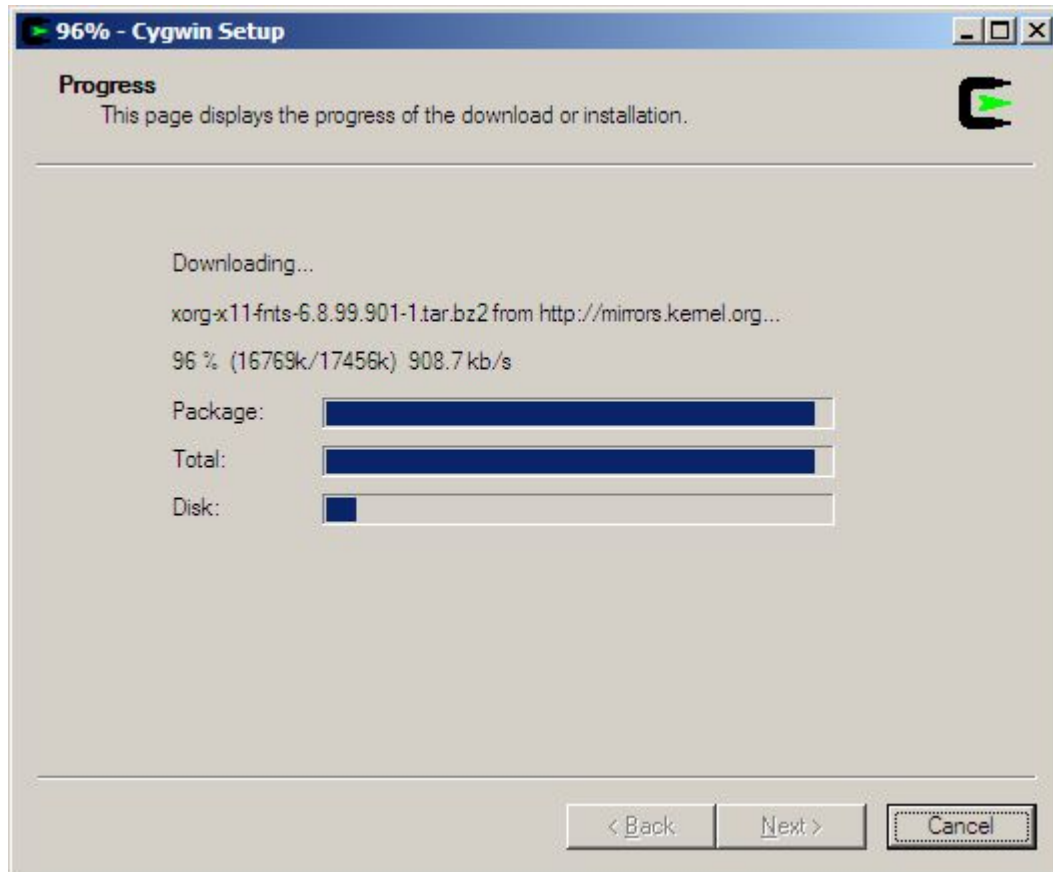


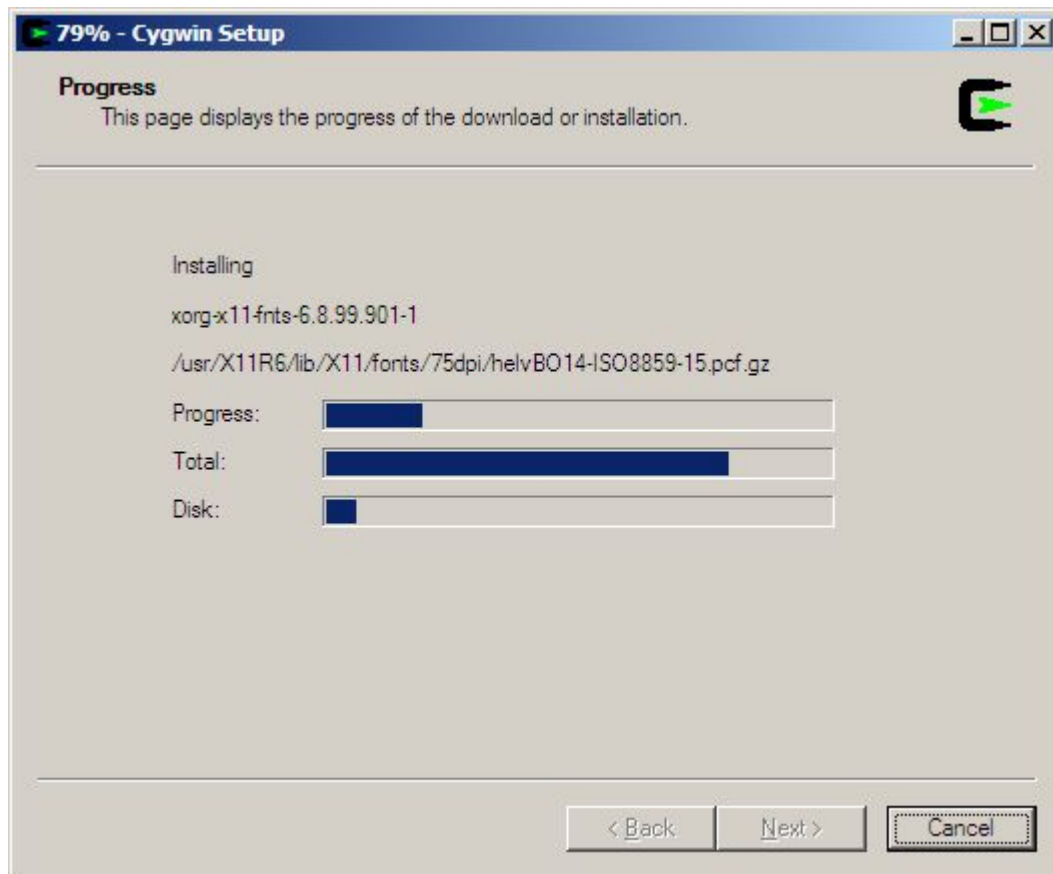
☐ Keep ☐ Prev ☒ Cur ☐ Exp View Category

Category	New	B...	S...	Size	Package
X11	Default				
	Skip	n/a	n/a	1,482k	WindowMaker: WindowMaker
	1.0.4-1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4k	X-start-menu-icons: Start menu
	1.0.11-1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	6k	X-startup-scripts: Cygwin/X sta
	Skip	n/a	n/a	1,385k	XFree86-lib-compat: Cygwin/X
	Skip	n/a	n/a	166k	Xaw3d: A 3D version of the MI
	Skip	n/a	n/a	125k	aewm++: A minimal window ma
	Skip	n/a	n/a	185k	aewm++-goodies: Utilities to cc
	Skip	n/a	n/a	288k	cairo: Cross-device vector grap
	Skip	n/a	n/a	49k	cairo-doc: Cross-device vector
	Skip	n/a	n/a	195k	cgoban: X11 Client to IGS and
	Skip	n/a	n/a	1,477k	cygwin-x-doc: Cygwin/X-specif
	Skip	n/a	n/a	1,495k	ddd: Ddd
	Skip	n/a	n/a	1,885k	fvwm: F Virtual Window Manag
	Skip	n/a	n/a	78k	glitz: OpenGL image compositi
	Skip	n/a	n/a	1,457k	grace: A WYSIWYG 2D plottin
	Skip	n/a	n/a	770k	gtk+: Gimp Toolkit GUI library
	Skip	n/a	n/a	196k	gtk+-devel: Gimp Toolkit GUI li
	Skip	n/a	n/a	520k	gtk-engines: Theme engines fo
	Skip	n/a	n/a	167k	gv: A PostScript and PDF view
	Skip	n/a	n/a	10k	hicolor-icon-theme: Freedesktop
	Skip	n/a	n/a	1,177k	lesstif: Lesstif
	Skip	n/a	n/a	143k	libcairo2: Cross-device vector g
	Skip	n/a	n/a	45k	libggi2-display-x: X11 display m
	Skip	n/a	n/a	3k	libggiwmh0-display-x: X11 exte
	Skip	n/a	n/a	14k	libgii1-input-x: X11 input module
	Skip	n/a	n/a	9k	libglitz-glx1: OpenGL image cor
	Skip	n/a	n/a	136k	openbox: Openbox
	Skip	n/a	n/a	2,114k	perl-Tk: Perl interface for Tk (X
	Skip	n/a	n/a	2,825k	qt3: C++ GUI application frame
	Skip	n/a	n/a	1,680k	qt3-bin: C++ GUI application fr
	Skip	n/a	n/a	6,676k	qt3-devel: C++ GUI application
	Skip	n/a	n/a	6,382k	qt3-doc: C++ GUI application fi
	Skip	n/a	n/a	295k	shared-mime-info: Shared MIME
	Skip	n/a	n/a	176k	transfig: Transfig
	Skip	n/a	n/a	24k	x2x: X2x
	Skip	n/a	n/a	18k	xbrapi: X11 manager for BrIAp
	Skip	n/a	n/a	3,491k	xfig: Xfig (main package)
	Skip	n/a	n/a	982k	xfig-lib: Xfig-lib (shared graphpic
	Skip	n/a	n/a	60k	xgraph: Plotting program, reads
	Skip	n/a	n/a	54k	xmon: An interactive X protoco
	6.8.99.901-1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2k	xorg-x11-base: Cygwin/X base
	6.8.99.901-1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1,333k	xorg-x11-bin: Cygwin/X bin
	6.8.99.901-1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3,125k	xorg-x11-fonts: Cygwin/X fonts

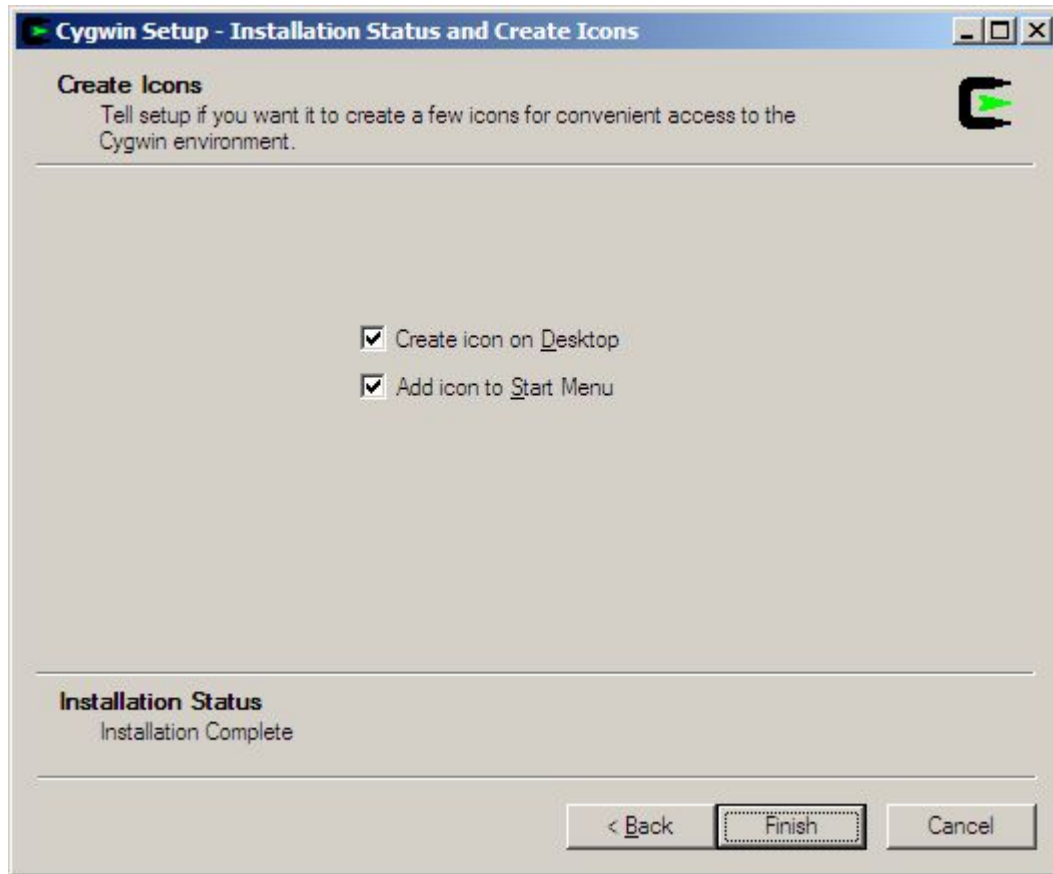
14) you can pick any other packages you might be interested in: e.g., gcc and make are part of Devel.

Choose Next to start the download and installation. You'll be able to watch download progress





and the installation wraps up with



Since I opted for several packages including gcc:

```
dir /s c:\cygwin
```

...

Total Files Listed:

14632 File(s) 257,158,510 bytes

3530 Dir(s) 237,193,355,264 bytes free

and

```
C:\>dir c:\cygwin
```

Volume in drive C is xp\_pro

Volume Serial Number is 54C4-92CB

Directory of c:\cygwin

```
03/03/2008 04:51 PM <DIR>      .
03/03/2008 04:51 PM <DIR>      ..
03/03/2008 04:50 PM <DIR>      bin
03/03/2008 04:50 PM <DIR>      cygdrive
03/03/2008 04:51 PM          57 Cygwin.bat
03/03/2008 04:51 PM      7,022 Cygwin.ico
03/03/2008 04:50 PM <DIR>      dev
03/03/2008 04:50 PM <DIR>      etc
03/03/2008 04:50 PM <DIR>      lib
03/03/2008 04:50 PM <DIR>      tmp
```



```
03/03/2008 04:50 PM <DIR>      usr
03/03/2008 04:50 PM <DIR>      var
      2 File(s)      7,079 bytes
     10 Dir(s) 237,193,355,264 bytes free
```

Similarly for the d:\download\_xp\cygwin directory

```
Total Files Listed:
    104 File(s)   79,944,614 bytes
    341 Dir(s) 537,353,854,976 bytes free
```

starting a bash shell by using a Cygwin prompt:

Copying skeleton files.  
These files are for the user to personalise  
their cygwin experience.

These will never be overwritten.

```
`./.bashrc' -> `/home/Art/.bashrc'
`./.bash_profile' -> `/home/Art/.bash_profile'
`./.inputrc' -> `/home/Art/.inputrc'
```

```
Art@bubbles ~
$ pwd
/home/Art
```